27/07/21

→ Acc. to Ernst Mayr, species is a group of organisms which :

(i) Are closely related — structurally and functionally

(ii) share the same gene pool

(iii) can interbreed freely in nature and produce fertile offsprings.

(iv) are reproductively isolated from other species.

NOTE : Polytypic species :

Species having more than one sub-species / variety.

(Eg) Brassica oleracea capitata [Cabbage]
Brassica oleracea botrytis [Cauliflower]

GENUS

→ It is a group of related species

→ Eg Potato, brinjal and makoi belong to the same genus Solanum.

Eg Lion, tiger and leopard belong to the same genus Panthera

NOTE:

① Monotypic genus: A genus with ONLY one species in the existing world.

Eg Homo sapiens

Ginkgo biloba

② Polytypic genus : A genus has more than one species in the existing world.

Eg Solanum tuberosum

Solanum melongena

Eg Panthera leo

Panthera tigris

FAMILY

→ It is a group of related genera

→ Eg Solanum, Petunia, Atropa, Datura, Nicotiana belong to the family Solanaceae

Eg Panthera and Felis belong to the family Felidae.

ORDER

→ It is a group of related families.

→ (Eg) Families like Solanaceae and Convolvulaceae belong to the same order Polymoniales. This was done because the concerned families have similar floral characters.

(Eg) families like Felidae (cat) and Canidae (Dog) belong to the order Carnivora.

CLASS

→ It is a group of related orders.

→ (Eg) Orders like Polymoniales and Sapindales belong to the class Dicotyledonae.

(Eg) Orders like Primata (human, monkey) and Carnivora (cats, dogs) belong to the class Mammalia.

DIVISION (for plants) / PHYLUM (for animals)

→ It is a group of related classes.

→ (Eg) Classes like Dicotyledonae and Monocotyledonae belong to the division Magnoliophyta / Angiospermae

↑ Acc. to NCERT

(Eg) Classes like Mammalia, Aves, Amphibia belong to the phylum Chordata.

KINGDOM

→ It is the highest category (w.r.t. seven obligate categories) with the related Divisions/Phyla.

→ (Eg) All the plants belong to Plant Kingdom (Plantae) & All the animals belong to Animal Kingdom (Animalia).

(HW) Do the common & Sc. names from study material given in tabular form.

TAXONOMICAL AIDS

(I) **Herbarium**:

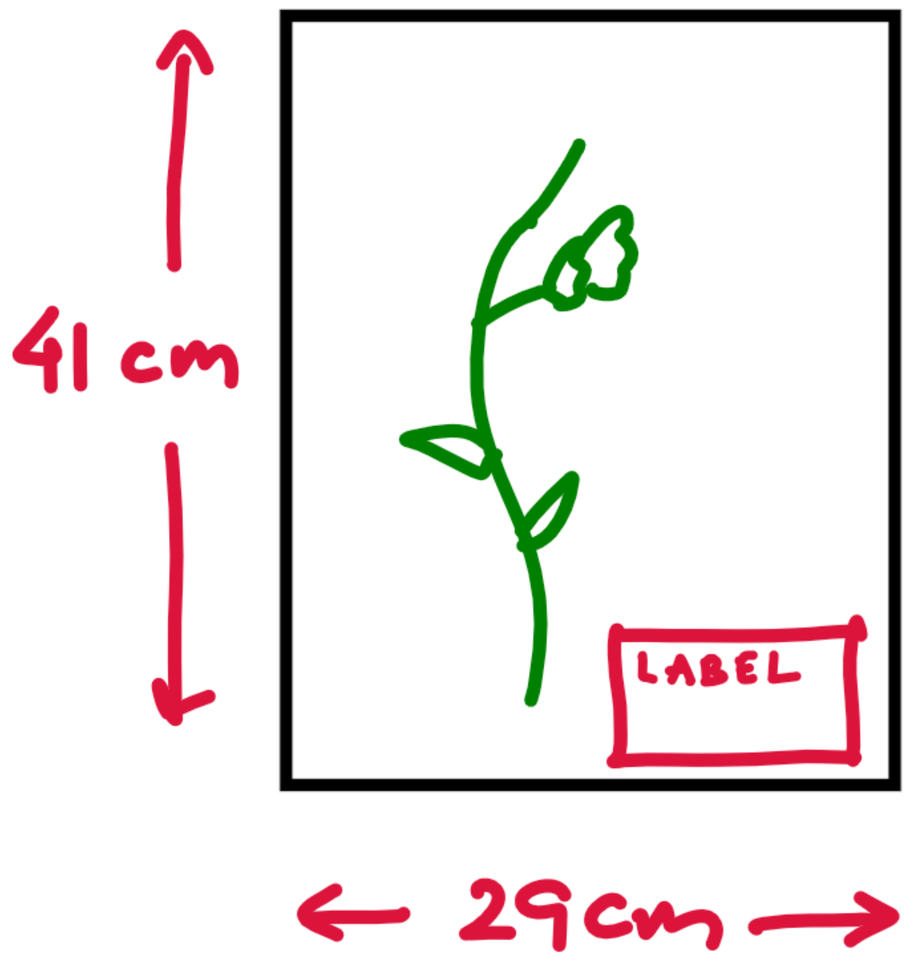
→ It is a store-house of collected plant specimen that are dried, pressed and

preserved on thick paper sheets called herbarium sheets. Further, these sheets are arranged acc. to a universally accepted system of classification. (In India we follow Bentham & Hooker's system)

→ These specimens, along with their description on herbarium sheets become a store house or repository for future use.

The herbarium sheet has a label also (right hand side, lower corner) providing information about date and place of collection, English, local and Biological names, family and collector's name.

(H) Herbaria also serve as quick referal system in taxonomic studies.



H/W → Museum, Botanical Garden & Zoological Parks.

(II) Key (It is a type of taxonomical book)

→ It is used for the identification of plants and animals based on similarities and dissimilarities.

→ The keys are based on contrasting characters generally in pair called couplet. It represents the choice made b/w two opposite options. This results in the acceptance of ONLY one and rejection of the other. Each statement in the key is called a lead.

→ Separate taxonomic keys are required for each taxonomic category like Family, Genus, Species etc.

→ Keys are generally analytical in nature.

NOTE: Special Taxonomic Book:

Flora	Manual	Monograph	Catalogue
Contains inform^n about habitat and distribution of plants in a given area	Contains complete listing and description of plants in a given area	Contains inform^n on any ONE taxon.	Contains the alphabetical arrangement of species describing their features.

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